

ABSTRACT OF THE DISCLOSURE

A collector is used to collect and mix liquid from an overlying zone in a mass transfer column in which fluid streams are processed, such as to obtain fractionation products. The collector has two or more liquid collection regions and two or more sumps positioned about the perimeter of the liquid collection regions. A plurality of channels and deflectors are spaced apart within each liquid collection region and vapor passages are formed in the spacings between adjacent channels. The deflectors direct descending liquid into the channels and shield the vapor passages from the descending liquid. The channels within each liquid collection region are arranged into interspersed sets, with one set of channels preferentially directing collected liquid into one sump and another set of channels preferentially directing collected liquid into another sump. Preferably, roughly equal amounts of liquid from each liquid collection region are delivered to the two sumps so that liquid in the sumps is of a more uniform concentration and composition. One or more of the sumps includes a downcomer for directing the liquid from the sump to an underlying zone. By mixing the liquid within the collector, the use of a separate mixing device can be avoided. As a result, vertical space in the column that would normally be occupied by the mixing device can be filled with packing or other internals to increase the efficiency of the column.